

5/21

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	23143
<b>Description:</b> Doubler	<b>Part Number:</b>	D3144-105
05.05.03 <del>PT</del>		
<b>Dwg:</b> D3144 Rev. B <del>page 6</del>	<b>Qty:</b>	10 910
04.12.01 <del>PT</del>		Page 1 of 1

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveler	<del>PT</del>	05.05.03	10
2	PG	Issue P/O: <u>7607986</u> Email or Ship DXF file to vendor Laser Cut D3144-105 flat pattern per Dwg D3144 Possible Supplier: GFI or Industrial Laser Material release note is required	U	05.05.04	10
3	RG	Receive and Inspect for transit damage Enure material release note is attached	CZ	05/05/18	10
4	QC6	Inspect dimensions as per Dwg D3144	<del>PT</del>	05.05.26	9
5	GA	<del>Debur</del>	N/A		
6	FP	Chemical Conversion Coat per QSI 005 4.1	ML	05 05 26	9
7	FP	Powder Coat Black Sandtex (Ref: 4.3.5.7) per QSI 005 4.3	ML	05 05 26	9
8	QC3	Inspect Powder Coat	CZ	05/05/27	9
9	ST	Identify and Stock	CZ	05/05/27	9
10	AC	Cost / part: <u>28.80</u>	SUC	05.06/01	9
11	DC	Close W/O <u>27.94</u> Inspect Level 21	<del>PT</del>	05.06.03	9

PTO

Rev	Date	Change	Revised By	Approved
A	04.11.29	New issue	KJ/RF	

RELEASED  
  
 04.11.30

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector
05.05.26	4	ONE KEPT FOR TEMPLATE IN STORE	<i>FF</i>	05.05.26	1	<i>FF</i> 05.05.26	<i>VB</i> 05.06.03

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

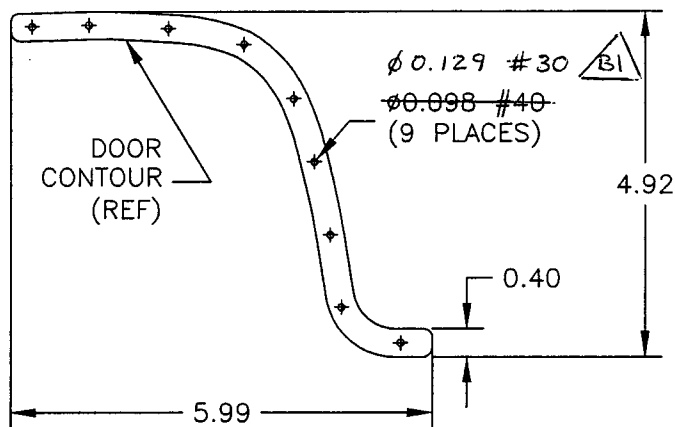
NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

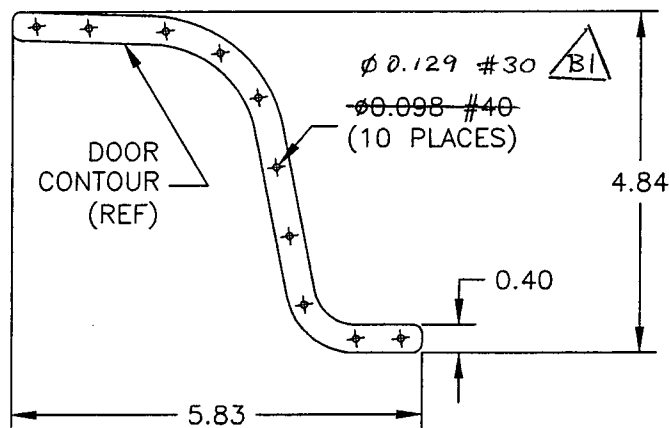


DESIGN #	DRAWN BY #	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3144	REV. B SHEET 6 OF 9
DATE 04.09.17		TITLE DOUBLER	SCALE NTS

RELEASED  
04.11.23



**D3144-105 DOUBLER (FOR D412-694-03)**



**D3144-117 DOUBLER (FOR D412-694-04)**

SHOP COPY  
RETURN TO  
ENGINEERING  
UNREVIEWED COPY  
SUBJECT TO COMMENT  
WITHOUT NOTICE

WORK ORDER  
NO. 23143

**D3144-105/-117 NOTES:**

- 1) MATERIAL: 2024-T3 SHEET (QQ-A-250/4) 0.032 THICK (REF DART SPEC M2024T3S.032)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT BLACK SANDTEX (4.3.5.7) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 6) MACHINE PER DRAWING "D3144-B6.DWG"

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# Job Costing Report

Dart Aerospace Ltd.  
Hawkesbury

May 03, 2005  
10:16 am

Work Order No : 0023143  
Project Name : D3144-105  
Project For : WK521  
Work Order Type : Main  
Main WO Number :  
House Part Number : D3144-105  
Description : Doubler  
Manufactured : Yes  
Amount Req'd : 10  
Amount Done : 0  
Start Date : 05-03-05  
Est Finish Date : 05-17-05  
Act Finish Date :  
Drawings Req'd : No  
Ok for Approval :  
Approval Rec'd :

Department Code:  
Burden Flags : NNNNNNNN  
WO Status : Open  
Invoice State : Not Invoiced  
Invoice Date :  
Invoice Number :  
Invoice Amount : 0.00  
Order Entry No :  
OE Value : 0.00  
Est Mark Up : 0.000%  
Actual Mark Up : 0.000%  
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Mark up :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	0.00

CERTIFICATE OF COMPLIANCE  
CERTIFICAT DE CONFORMITE



Membre de / A Member of **Thomas&Betts**

180 LABROSSE AVENUE  
POINTE CLAIRE, QC  
H9R 1A1

**DART AEROSPACE LTD**  
1270 ABERDEEN ST.  
HAWKESBURY, ON K6A 1K7

CERTIFICATE NO. 1 OUR JOB NO J0127444 SHIPPING MEMO 0303017

ITEM QUANTITY PURCHASE ORDER PART NUMBER REV NAME DWG ISSUE

10 PCS 2007986 D3144-105 DOUBLER B

MATERIAL SUPPLIED BY MAT. REL. NO.

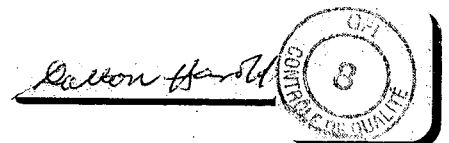
AL 2024-T3 (QQ-A-250/4) SAMUEL SPECIALTY 0058514 ATT'D

	PROCESS	PROCESSOR	RELEASE NOTE #
1			
2			
3			
4			
5			
6			
7			
8			
9			

WE HEREBY CERTIFY ALL THE PARTS COVERED BY THIS CERTIFICATE HAVE BEEN MANUFACTURED FROM MATERIAL SUPPLIED ON RELEASE NOTE SHOWN ABOVE AND THAT ALL PARTS HAVE BEEN INDIVIDUALLY INSPECTED AND CONFORM TO THE DRAWINGS AND PURCHASE ORDER REFERENCED ABOVE.

DATE 16 MAY 2005

G.F.I. Q.C. REP.





117-05

Programme d'Assurance Qualité Enregistré / Registered Q.A. Program  
ISO 9001:2000 AS9100

**LETTRE DE CONFORMITÉ – LETTER OF COMPLIANCE**

**Date:** 7 MARS 2005

**Company Name:** G.F.I. Division of Thomas & Betts, Limited  
**Address:** 180 avenue Labrosse  
**City:** Pointe Claire, Qué.  
**Zip Code:** H9R 1A1

**# du client:** 0058514

**# de commande SSMQ:** 811460

**Customer's order #:**

**SSMQ's Order #:**

La présente est pour certifier que le matériel détaillé ci-dessous est conforme aux exigences de votre commande et des normes du grade tel que décrit:

The following is to certify that the material listed below meets your order requirements and grade standards as described:

Notre/Our Item #	# de pièces/ # of pieces	Épaisseur/Grandeur Guage/Size	Alliage/Trempe Alloy/Temper	Spécification / Specification	Lot/Heat
1	2	.032" x 48" x 144"	2024 T3	AMS-QQ-A-250/4	226511

Bien à vous,  
Yours truly,



Commis à l'administration.  
Administration Clerk.



SHIP TO:  
LES METAUX SPECIALISES SAMUEL  
(SHIP TO)  
21525 CLARK GRAHAM  
BAIE D'URFE, PQ, CA H9X3T5

SOLD TO:  
SAMUEL SON & CO LTD  
2225 FRANCIS HUGHES  
LAVAL, PQ, CA H7S1N5

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4011938

CUSTOMER PO NUMBER: N16221		CUSTOMER PART NUMBER:		SHIPPING RUN #/LOAD ID: 100089/2		GOVT CONTRACT NUMBER:	
KAISER ORDER NO: 1008983	LINE ITEM: 1	SHIP DATE: 9-JUL-2004		ALLOY: 2024	CLAD: BARE	TEMPER: T3	
WEIGHT SHIPPED: 3928 LB	QUANTITY: 173 PCS EST.	B/L NUMBER: 202031		GAUGE: 0.0320 IN	WIDTH: 48.00 IN	LENGTH: 144.000 IN	

### Certified Specifications

AMS 4037/RevN

AMS-QQ-A-250/4/RevA

ASTM B 209/Rev04

Test Code: 1504

### Test Results

Lot: 226511		Cast		Drop		Ingot						
Tensile:	Temper	Dir / # Tests		Ultimate KSI (MPA)		Yield KSI (MPA)		Elongation %				
	T3	LT / 2 (Min:Max)		67.4 : 67.6		45.2 : 45.3		17.8 : 18.3				
				(465 : 466)		(312 : 312)						
Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	
Actual	0.08	0.22	4.46	0.55	1.32	0.01	0.17	0.01	0.01	0.00	TOT	0.06

### ALLOY LIMITS

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
2024 MIN	0.00	0.00	3.80	0.30	1.20	0.00	0.00	0.00	0.00	0.00	EACH	0.05
MAX	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0.15	0.05	0.05	TOT	0.15

Aluminum Remainder

### CERTIFICATION

KAISER ALUMINUM & CHEMICAL CORPORATION (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MANUFACTURED IN THE U.S.A. AND HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT-TREATED COMPLIES WITH AMS 2772 (MIL-H-6088). ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS ARE ON FILE, SUBJECT TO EXAMINATION. ISO-9001:2000 CERTIFIED

BILL POYNOR, LABORATORIES SUPERVISOR

*Bill Poy*